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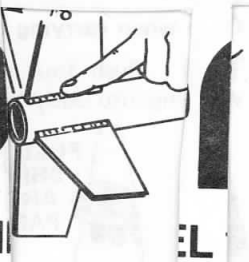

RECOMMENDED EN
1/2A3-2T A3-4T A
Use 1/2A3-2T for firs

KIT NO. 0820

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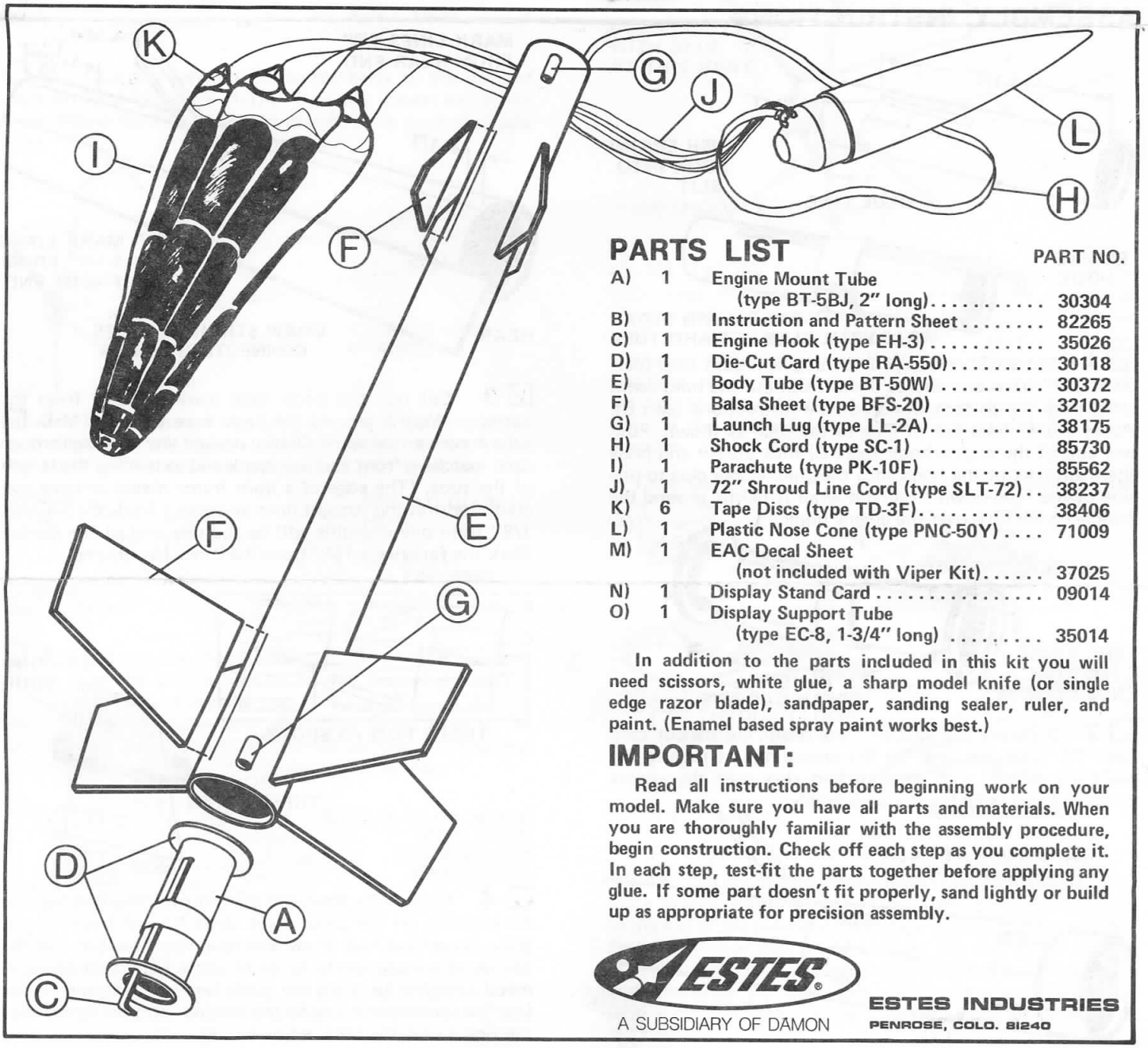
estes aerospace club

Official Kit



PARTS LIST

			PART NO.
A)	1	Engine Mount Tube (type BT-5BJ, 2" long)	30304
B)	1	Instruction and Pattern Sheet	82265
C)	1	Engine Hook (type EH-3)	35026
D)	1	Die-Cut Card (type RA-550)	30118
E)	1	Body Tube (type BT-50W)	30372
F)	1	Balsa Sheet (type BFS-20)	32102
G)	1	Launch Lug (type LL-2A)	38175
H)	1	Shock Cord (type SC-1)	85730
I)	1	Parachute (type PK-10F)	85562
J)	1	72" Shroud Line Cord (type SLT-72)	38237
K)	6	Tape Discs (type TD-3F)	38406
L)	1	Plastic Nose Cone (type PNC-50Y)	71009
M)	1	EAC Decal Sheet (not included with Viper Kit)	37025
N)	1	Display Stand Card	09014
O)	1	Display Support Tube (type EC-8, 1-3/4" long)	35014

In addition to the parts included in this kit you will need scissors, white glue, a sharp model knife (or single edge razor blade), sandpaper, sanding sealer, ruler, and paint. (Enamel based spray paint works best.)

IMPORTANT:

Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete it. In each step, test-fit the parts together before applying any glue. If some part doesn't fit properly, sand lightly or build up as appropriate for precision assembly.

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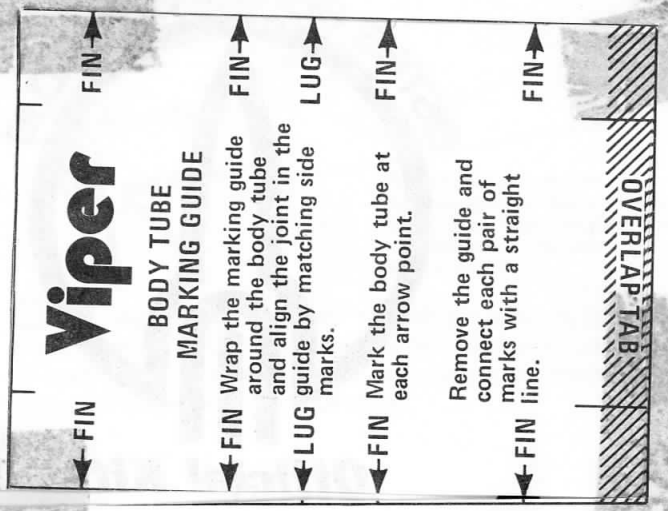
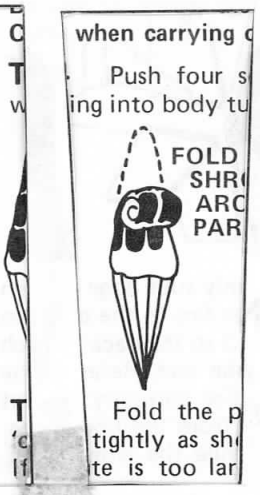
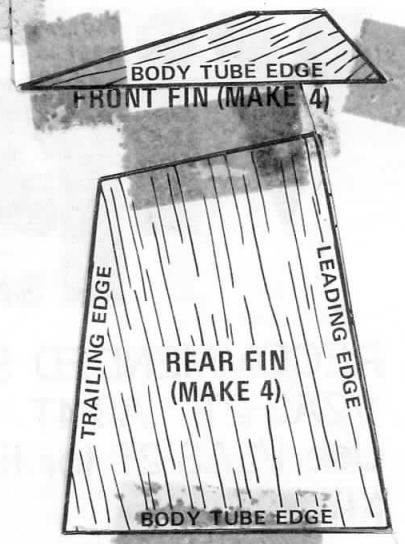
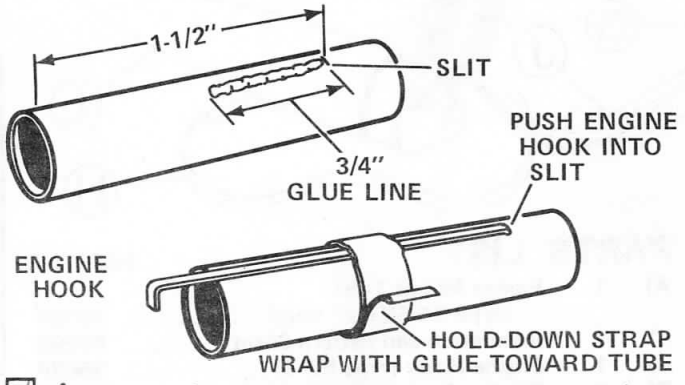


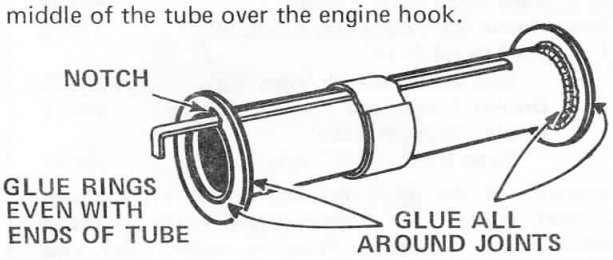




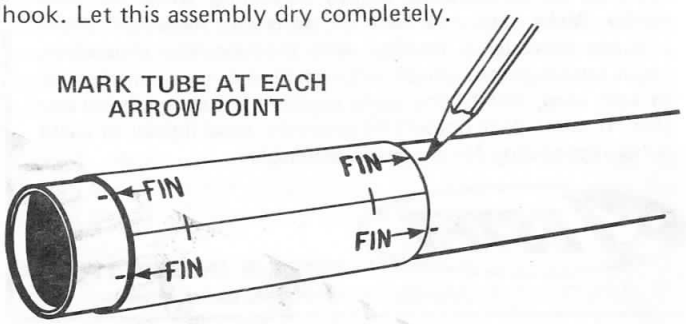
ASSEMBLY INSTRUCTIONS

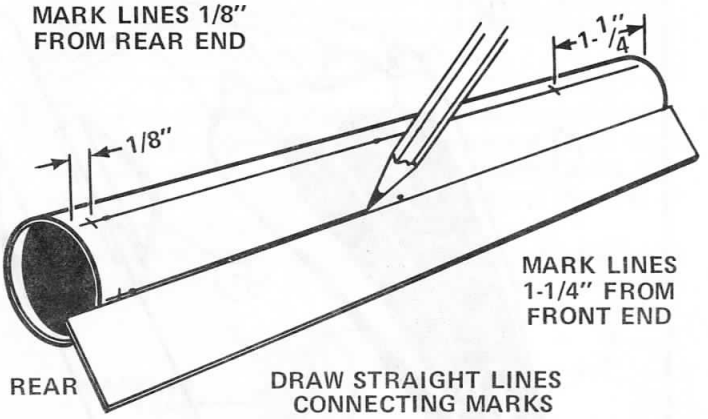


☑ **1** Cut a 1/8" wide slit in the engine mount tube (part A), 1-1/2" from one end as shown. Cut out the hold-down strap from the pattern section of the instructions (part B). Apply a 3/4" long line of glue to the tube as shown. Push one end of the engine hook (part C) into the slit and press the main part of the hook into the glue. Apply glue to one side of the hold-down strap and wrap it tightly around the middle of the tube over the engine hook.

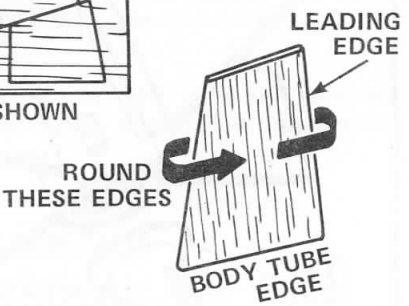


☑ **2** Separate the adapter rings from the die-cut card (part D). Glue the rings on the engine mount tube in the positions shown, with the notched ring over the engine hook. Let this assembly dry completely.

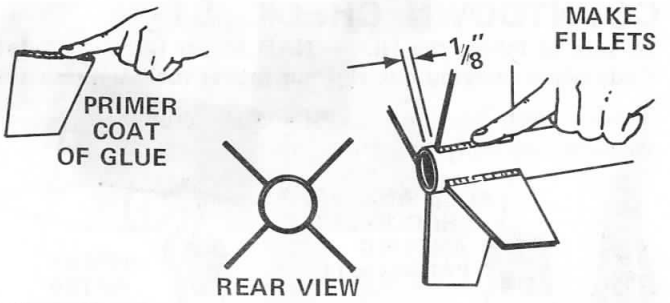




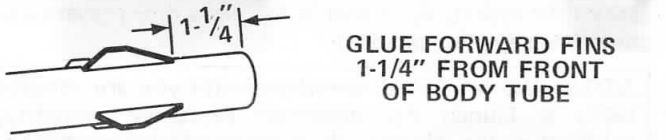
☑ **3** Cut out the body tube marking guide from the patterns. Wrap it around the body tube (part E). Mark the tube at each arrow point. Draw a straight line running through each matching front and rear mark and extending the length of the tube. (The edge of a door frame makes an excellent guide for drawing straight lines on tubes.) Mark the fin lines 1/8" from one end--this will be the rear end of the model. Mark the fin lines 1-1/4" from the other (front) end.



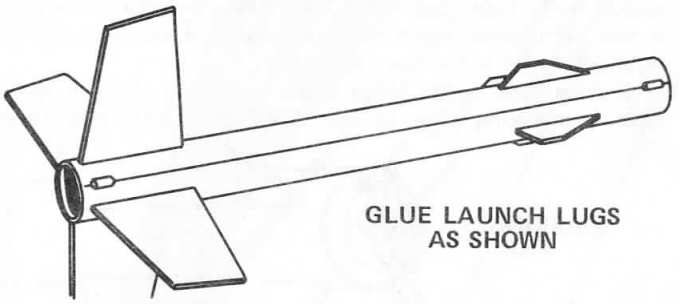
☐ **4** Cut out the front and rear fin patterns. Position the fin patterns on the balsa sheet (part F) and trace around them to outline four front and four rear fins. Cut out the fins using a sharp model knife or single edge razor blade. A metal straightedge is a good guide for cutting straight lines. Use fine sandpaper to round the leading and trailing edges of the fins. Leave the other edges square.



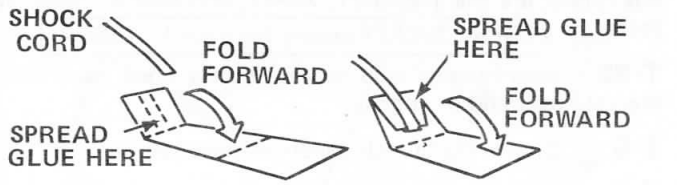
☐ **5** Rub a line of glue into the body tube edge of each rear fin and allow to dry. Glue the rear fins to the body on the fin alignment lines drawn in step 3 so the back of each fin is on the mark 1/8" from the tube end. Refer to the drawing to be sure you position the fins correctly. Adjust the fins so they project straight away from the body tube. Do not set the rocket on its fins while the glue is wet.



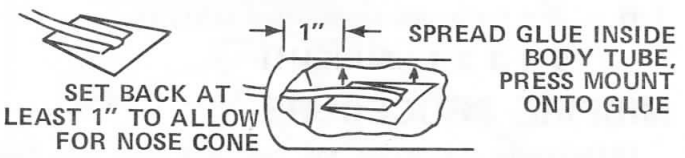
☐ **6** Glue the forward fins to the body so the front of each fin is on the mark, 1-1/4" from the (front) end of the tube. Adjust the fins to project straight away from the body tube.



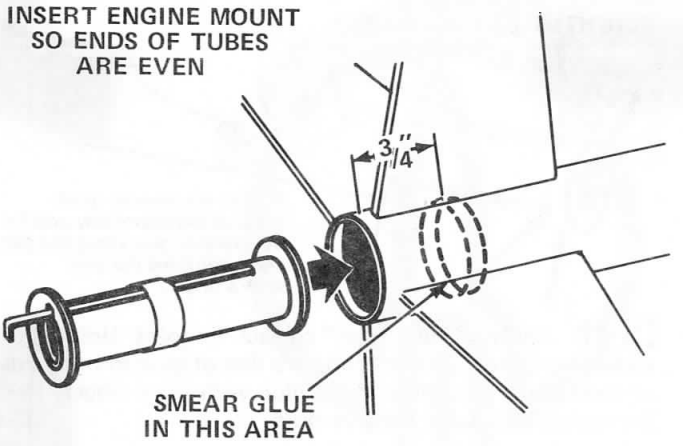
☐ **7** Cut the launch lug (part G) in half. Glue the pieces to the body on the launch lug line. Position one 1/4" from the front of the tube and the other 1/4" from the rear.

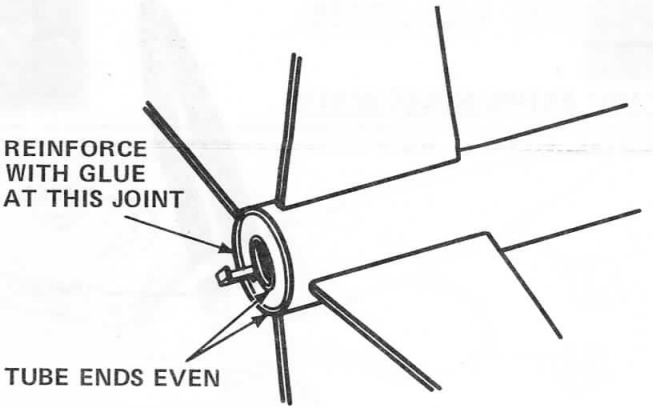


☐ **8** Cut out the shock cord mount from the patterns. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part H) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Clamp the unit together with your fingers until the glue sets.

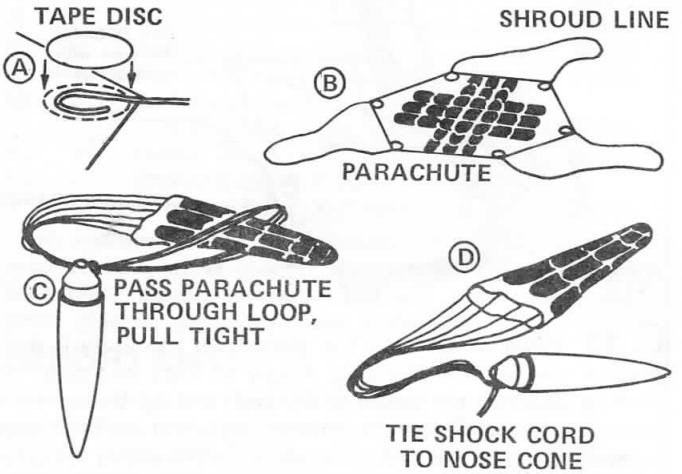


☐ **9** Apply glue to the inside of the body tube at the front over an area about 1" to 2" from the end. The glued area should be the same size as the shock cord mount. Press the mount into the glue as shown and hold it until the glue sets.

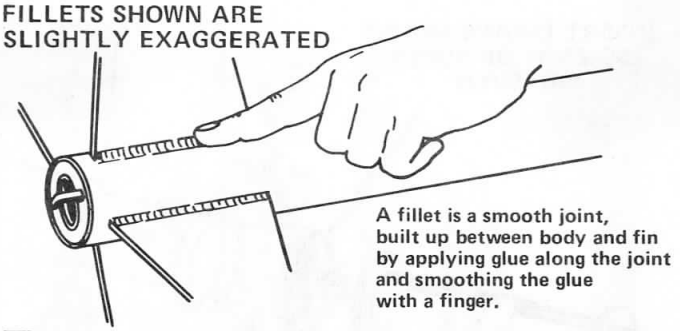




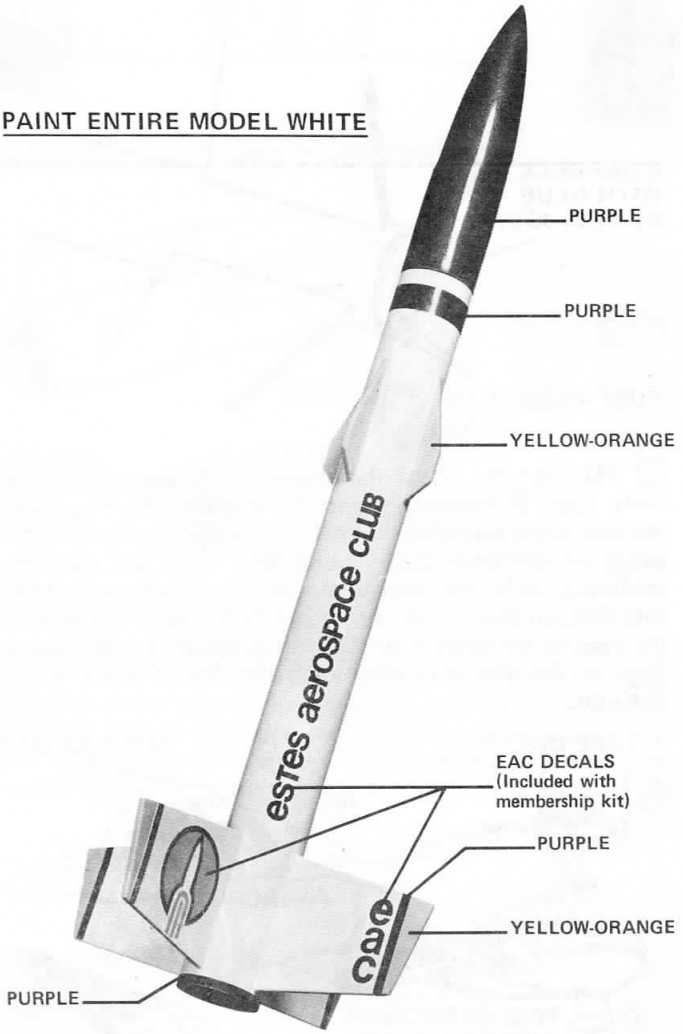
☐ **10** Test the fit of the engine mount assembly in the body tube. If necessary, sand the edges of the rings until the unit slides smoothly in the body. Smear glue around the inside of the body tube about 3/4" from the rear. Immediately slide the engine mount into place, unnotched ring first, so the end of the engine mount tube is even with the rear of the body tube. Do not pause during this operation, or the glue may stick with the mount in the wrong position.



☐ **11** Cut out the parachute (part I) on its edge lines. Cut three 24 inch lengths of shroud line (part J). Attach line ends to the top of the parachute with tape discs (part K) as shown. Pass the shroud line loops through the ring at the rear of the nose cone (part L). Pass the parachute through the loop ends and draw the lines tight against the ring. Set the knot with a drop of glue. Tie the free end of the shock cord to the ring.


FILLETS SHOWN ARE
SLIGHTLY EXAGGERATED
A fillet is a smooth joint, built up between body and fin by applying glue along the joint and smoothing the glue with a finger.

☐ **12** Apply a glue "fillet" to each fin joint. Holding the rocket horizontally (level), apply a line of glue to both sides of each joint. Smooth out the glue with your finger. Keep the rocket level until the glue dries.



☐ **13** When all glue on the outside of the body is dry, prepare the fins for painting. Apply at least two coats of sanding sealer to the fins. Let dry and sand lightly between coats. Do this until the tiny holes in the wood are filled and everything looks and feels smooth. Give the entire rocket a light base coat of white. When dry follow with the trim colors shown in the decor illustration.

☐ **14** When all paint is dry, apply decal (part M) as shown in the decor illustration. For best results, give the model a coat of clear spray to protect the decals.

☐ **15** Assemble the display stand (parts N and O) according to the instructions on the back of the card.

COUNTDOWN CHECKLIST

Be sure to follow the HIA – NAR Model Rocketry Safety Code when carrying out all your model rocketry activities.

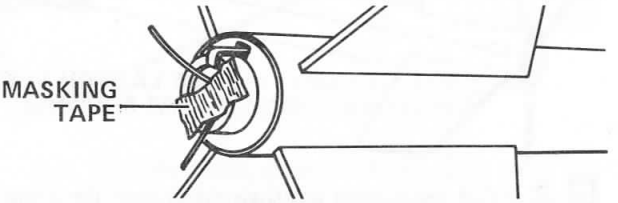
T-14 Push four squares of loosely crumpled recovery wadding into body tube from front.

T-13 Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines around it. If 'chute is too large, unroll it and repack until it slides easily into rocket. A fit that is too tight may prevent parachute from ejecting properly.

NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

T-12 Pack shock cord neatly into rocket, then slide nose cone into place. Nose cone should separate easily from rocket body tube, but should not be extremely loose. If it is too tight, sand inside of body tube end and shoulder of nose cone with extra fine sandpaper.

If nose cone is too loose add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.



T-11 Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are the 1/2A3-2T, A3-4T, and A10-3T made by Estes. Use a 1/2A3-2T engine for your first flight.

T-10 Insert engine into rocket. Engine hook must latch securely over end of engine.

T-9 Disarm the launch panel---remove safety key.

T-8 Place rocket on launch pad, making sure rocket slides freely on launch rod. Clean the micro-clips and attach them to the igniter.

T-7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6 Arm the launch panel---insert safety key.

5 4 3 2 1 LAUNCH!!

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn into two pieces without igniting the engine. This is almost always caused by a failure to install the igniter correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle, and install a new igniter. Follow the launching procedure again.

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